

C9 MATHS P1

PROBABILITY - BERNOULLI

TOSS A COIN OR MEASURE
A Q BIT

$$p = .5$$

N

$$E(x) = Np = \frac{N}{2}$$

$$STD(x) = \sqrt{Npq} = \frac{\sqrt{N}}{2}$$

$$N = 1000$$

$$E(x) = 500$$

$$STD(x) = 15.8$$

$$P[485 \leq x \leq 515] = \frac{2}{3}$$

BITS PROB: REDUCE HW NOISE

REAL Q MACHINE 524-476

THAT'S A LITTLE FAR OFF.

ALMOST 20

PROBABLY FROM HARDWARE

$$N = 16$$

$$\mu = \frac{16}{2} = 8$$

2

$$\sigma = \frac{\sqrt{16}}{2} = 2$$

$\frac{2}{3}$ OF TIME WE'LL SEE $\delta \pm 2$
 $G \rightarrow 10$

REAL Φ MACHINE.

31%, 69% ~~100%~~ L20

ANY PARTICULAR STRANGE THINGS
 YOU'D LIKE TO SEE IN MORE
 SB DETAIL?